

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-333160

(43)Date of publication of application : 17.12.1996

(51)Int.Cl. C04B 35/49

H03H 3/02

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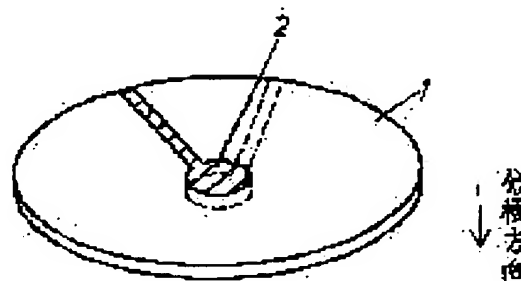
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## (54) PIEZOELECTRIC CERAMIC COMPOSITION AND PRODUCTION OF PIEZOELECTRIC RESONATOR USING THE SAME

### (57)Abstract:

PURPOSE: To obtain a piezoelectric resonator having small variation in piezoelectricity and resonant frequency in a humidified atmosphere and excellent in thermal shock resistance.

CONSTITUTION: A silver electrode 2 is formed on a piezoelectric ceramic 1 obtained by polarizing a sintered material of a piezoelectric ceramic composition comprising a main component expressed by



$\text{Pb}(\text{Zn}_{1/3}\text{Nb}_{2/3})\text{A}(\text{Sn}_{1/3}\text{Nb}_{2/3})\text{BTiCZrDO}_3$  ( $\text{A}=0.03\text{--}0.48$ ,  $\text{B}=0.01\text{--}0.25$ ,  $\text{C}=0.25\text{--}0.625$ ,  $\text{D}=0.25\text{--}0.625$ ;  $\text{A}+\text{B}+\text{C}+\text{D}=1$ ) added with 0.5–10.0wt.% of a compound of  $\text{Pb}(\text{Me}_{1/2}\text{Te}_{1/2})\text{O}_3$  (Me is at least one kind of metal selected

from the group consisting of Mn, Co, Ni and Cu), annealing at 0.4–0.8 times of Curie temperature for  $\geq 1$ hr and holding at a normal temperature for  $\geq 48$ hr and polishing.

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## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's  
decision of rejection]

[Kind of final disposal of application  
other than the examiner's decision of  
rejection or application converted  
registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against  
examiner's decision of rejection]

[Date of extinction of right]

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